Honeywell

PITIF

Casino Equipment Interface

User Manual

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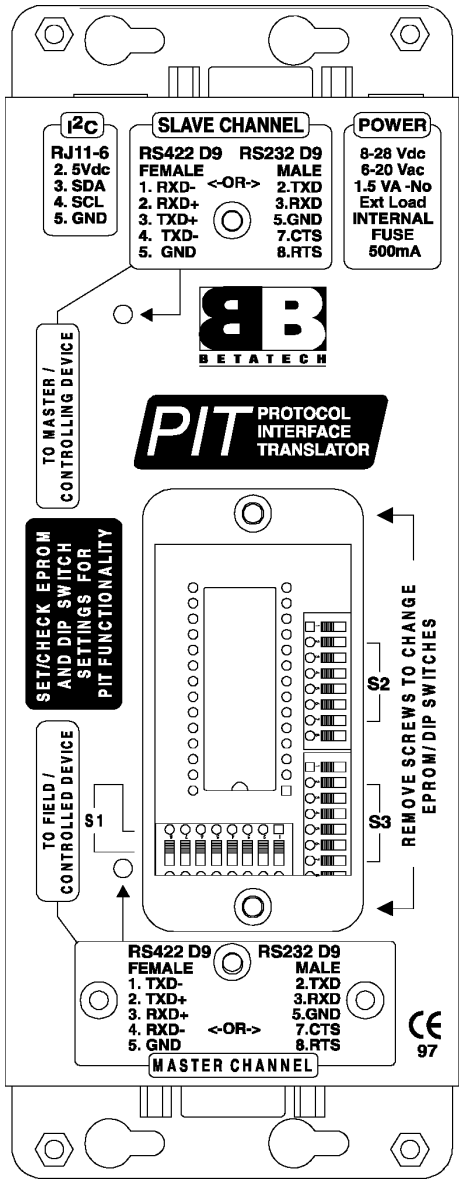
1.1 INTRODUCTION

The Casino Equipment Interface (PITIF) consists of a Honeywell Protocol Interface Translator (PIT) with specialized interface firmware. The function of this product is to receive serial data from a number of different types of equipment, commonly found in casinos and to convert this data into a standard format. The data is then transferred from the PITIF via serial communications to a Casino Hot Box, which directs the data for overlay on video titling equipment. It is thus possible to obtain data from scales, note counters, coin counters and the like and then superimpose this information on video.



1.1 INTRODUCTION, CONTINUED

The standard Honeywell PIT may be used for creating the PITIF. Due to the nature of the systems, isolated PIT units are preferable. This ensures that the Honeywell RS422 network is electrically isolated from the equipment to which interfaces are connected. PITIF's are available with either RS232 or RS422 options, dependant on the serial ports available on the equipment to be interfaced. The PITIF has two serial communications ports. The "Slave" port connects to the Bossware interface communications loop. The "Master" port connects to the equipment which requires interfacing. DIP switches allow for setting the address, baud rate, interface options and filtering options.

2.1 OPERATION

On power up, both the slave channel and the master channel LEDs, will be illuminated.

The PITIF receives serial data from the interfaced equipment and extracts relevant data dependant on the DIP switch settings. On receipt of a message the master communications channel LED will briefly flash. The data is stored internally until the PITIF is polled by the Casino Hot Box or by a data concentrator. In either case the slave communications channel LED will flash when the PITIF is polled and the data from the equipment will be returned via the RS422 serial communications link. Only messages addressed to the unit address set up on DIP switch 2 will be received.

The PITIF allows for up to 8 different string fields to be extracted from the incoming data. These are referred to as String[1] to String[8]. The contents of these strings are dependant on the interface switch settings.

3.1 SWITCH SETTINGS

To access the configuration switches, the two screws on the top cover of the PIT must be removed. The legend on the cover shows the switches as S1, S2 and S3. Each of these switch groups has 8 individual switches, marked as 1 through 8. Individual switches are referred to by the switch group, followed by the switch number. e.g. S1/8.

3.1.1 Address Selection

Set switch 2, to the required address of the PITIF. This would usually match the logical system number of the equipment which is interfaced, although this number may be mapped by the data concentrator. The actual switch setting is the binary representation of the address. The following table shows the first few addresses:

Address	**S2/8**	**S2/7**	**S2/6**	**S2/5**	**S2/4**	**S2/3**	**S2/2**	**S2/1**
Switch Legend	**Address 7**	**Address 6**	**Address 5**	**Address 4**	**Address 3**	**Address 2**	**Address 1**	**Address 0**
0 (B/cast)	Off	Off	Off	Off	Off	Off	Off	Off
1	Off	Off	Off	Off	Off	Off	Off	On
2	Off	Off	Off	Off	Off	Off	On	Off
3	Off	Off	Off	Off	Off	Off	On	On
4	Off	Off	Off	Off	Off	On	Off	Off
5	Off	Off	Off	Off	Off	On	Off	On
6	Off	Off	Off	Off	Off	On	On	Off
…								
255	On	On	On	On	On	On	On	On

3.1.2 Slave Port Baud Rate Selection

Switch 3, positions 7 and 8 are used to set the slave port baud rate as follows:

Baud Rate	**S3/8**	**S3/7**
1200 baud	Off	Off
9600 baud	Off	On
19.2 Kbaud	On	Off
57.6 Kbaud	On	On

3.1.3 Master Port Baud Rate Selection

Switch 3, positions 5 and 6 are used to set the slave port baud rate as follows:

Baud Rate	S3/6	S3/5
2400 baud	Off	Off
9600 baud	Off	On
19.2 Kbaud	On	Off
57.6 Kbaud	On	On

Note that certain interfaced equipment may operate at different baud rates. In such a case there will be a specific note to this effect in the section of this manual which covers that equipment.

3.1.4 Master Port Parity Selection

Switch 3, positions 4 and 5 are used to set the slave port parity rate as follows:

Parity	S3/4	S3/3
None	Off	Off
Even	Off	On
Odd	On	Off
No parity, 2 stop bits	On	On

Note that certain interfaced equipment may operate at different parity and stop bit settings. In such a case there will be a specific note to this effect in the section of this manual which covers that equipment.

3.1.5 Master Port Interface Device Type Selection

Switch 1, positions 1 to 4 are used to set the protocol which the PIT will receive on it's master communications channel. The group of protocols depends on the setting of S2/8. If S2/8 is off, the following protocols are supported.

Input / Received Protocol Compatible With (S2/8 Off)	S1/4	S1/3	S1/2	S1/1
Text / diagnosis input	Off	Off	Off	Off
Glory GND200 Spindle Note Counter (or GNH200)	Off	Off	Off	On
Teraoke DC150 Scale	Off	Off	On	Off
Mach 7 or Mach 12 Coin batch counter	Off	Off	On	On
Glory GFR120 Note Counter / Sorter	Off	On	Off	Off
Scan Coin SC880 Currency Counter	Off	On	Off	On
CVK110 / CC50 Note Counter	Off	On	On	Off
COR15 Coin Scale	Off	On	On	On
Glory GFB500 Note Batcher	On	Off	Off	Off
Glory CN12 Coin Counter	On	Off	Off	On

3.1.5 Master Port Interface Device Type Selection, Continued

Input / Received Protocol Compatible With (S2/8 Off)	**S1/4**	**S1/3**	**S1/2**	**S1/1**
Paycom Progressive Jackpot	on	Off	on	off
Innomat	on	Off	on	on
Aristocrat	on	On	off	off
DelaRue SQ2620	on	On	off	on
Cashcat	on	On	on	off
DelaRue SQ2800	on	On	on	on

If S2/8 is on, the following protocols are selected using S1/1..S1/4.

Input / Received Protocol Compatible With (S2/8 On)	**S1/4**	**S1/3**	**S1/2**	**S1/1**
Text / diagnosis input	Off	Off	Off	Off
DCJ60	Off	Off	Off	On
Felix	Off	Off	On	Off
Jet Sort	Off	Off	On	On
Magna	Off	On	Off	Off
TCD	Off	On	Off	On
PD1250	Off	On	On	Off
Jet Count	Off	On	On	On
Scan Coin SC3003	On	Off	Off	Off
Scan Coin SC2002	On	Off	Off	On
Reserved	On	Off	On	Off
Reserved	On	Off	On	On
Reserved	On	On	Off	Off
Reserved	On	On	Off	On
Reserved	On	On	On	Off
Reserved	On	On	On	On

Note that DIP switch 1, positions 5 to 8 may have differing functionality dependant on the above switch settings. For further information, refer to the section covering the equipment which has been interfaced.

3.1.6 Filtering

DIP switch 3, positions 1 and 2 are used to set data filtering as follows:

Filter Time-out	S1/7	S1/6
Disabled – no timeout	Off	Off
250 mSec	Off	On
500 mSec	On	Off
1 Second	On	On

When data filtering is enabled, changes in received data are stored internally but not reported to the Casino Hot-Box for the filter period. For rapidly changing data, this can greatly reduce the amount of traffic on the associated data networks.

4.1 INTERFACE MODE DEVICE SPECIFIC OPERATION

4.1.1 Diagnostic Mode

In this mode of operation, data is received on the master port, followed by a carriage return (0x0d). This data is used as device String[1]. By connecting a PC to the master port with a suitable terminal emulation program, it is possible to type in text strings which may then be overlaid on the video signal.

4.1.2 Glory GND200 / GNH200 Spindle Note Counter

In this mode of operation, the PITIF receives RS232 data. The received data contains information on the current note count in the format “Note Count = xxxx”. This data will be available as String[1]. Should no data be received from the GND200, String[1] will indicate “Note Counter Disconnected”.

4.1.3 Teraoke DC150 Scale

The PITIF receives serial RS232 data. . The received data contains information on the current weight, Tare weight, unit weight and quantity from the scale. The table below indicates how the received data is copied into the various strings and in some cases, the DIP switch settings required to enable the display of each string. Should no data be received from the DC150, String[1] will indicate “Scale Disconnected”.

String	String Contents	Enable with
String[1]	Weight (e.g. 1.23 Kg)	Always enabled
String[2]	Quantity and Unit Weight (e.g. 123 X 0.01)	S1/8
String[3]	Tare Weight (e.g. Tare = 0.00)	S1/7

4.1.4 Mach 7 Coin Batch Counter

The Mach 7 generates a number of lines of text, intended for display on a printer. Each line of text is extracted and stored as String[1], String[2] … String[8], depending on how many lines are actually received from the Mach 7.

Note that as the Mach 7 does not generate data periodically, it is not possible to indicate whether the unit is connected or not.

4.1.5 Glory GFR120 Note Counter / Sorter.

The GFR120 generates a number of lines of text, intended for display on a printer. Each line of text is extracted and stored as String[1], String[2] … String[8], depending on how many lines are actually received from the GFR120.

Note that as the GFR120 does not generate data periodically, it is not possible to indicate whether the unit is connected or not.

4.1.6 Scan Coin SC880 Currency Counter

The PITIF receives serial RS232 data. . The received data contains information on the current count, mode and batch size from the note counter. The table below indicates how the received data is copied into the various strings and in some cases, the DIP switch settings required to enable the display of each string. Should no data be received from the DC150, String[1] will indicate “Scale Disconnected”.

String	String Contents	Enable with
String[1]	Note count (e.g. Note Count = 1234)	Always enabled
String[2]	Batch Size (e.g. Batch Size = 100)	S1/8
String[3]	Mode (e.g. Tare = Man Add IP UV)	S1/7

4.1.7 CC50 / CVK110 Note Counter / Sorter

The PITIF receives serial RS232 data which contains quantity, value and denomination. The PITIF will set String[1] to be the value and String[2] to contain the count and denomination.

4.1.8 COR15 Coin Scale

??????????????????????????

4.1.9 Glory GFB500 Note Batcher

In order to retrieve the note count the PITIF transmits an ‘A’ to the note batcher. The reply contains the current note count which is copied to String[1] as “Note Count = xxxx”. Should no reply be received String[1] will be set to “Batcher Off Line”.

4.1.10 Glory CN 12 Coin Counter

The PITIF receives serial RS232 data. . The received data contains information on the current count, denomination and total value of the coin counter. The table below indicates how the received data is copied into the various strings and in some cases, the DIP switch settings required to enable the display of each string. Should no data be received from the CN12, String[1] will indicate “Counter Disconnected”. Note that the data which is sent to the display is shown exactly as it is received. By switching on DIP switch S1/7, it is possible to ensure that the PITIF generates information which is sent by the CN12 only on power up. This has been incorporated as an option in case Glory modifies the display in future software revisions, in which case it may be necessary to switch S1/7 off.

String	String Contents	Enable with
String[1]	Coin count and Value (line 2 of punter display)	Always enabled
String[2]	Denomination (line 1 of punter display)	S1/8

4.1.11 Paycom Progressive Jackpot

The PITIF receives serial RS422 data. . The received data contains information on the current jackpot. The received data is formatted into String[1] as “Jackpot = R 1234.56”.

5.1 CONNECTIONS

5.1.1 Slave Port Configured as RS422

Control messages from the master control device, which polls for string information, are received on this port. The RS422 configuration allows for multiple PITIF’s to be connected on a common communications line. Connections are as follows:

Pin Number	Pin Function
1	RS422 Receive data [-] (from BossWare / ControLink master RS422 Tx[-])
2	RS422 Receive data [+] (from BossWare / ControLink master RS422 Tx[+])
3	RS422 Transmit data [+] (to BossWare / ControLink master RS422 Rx[+])
4	RS422 Transmit data [-] (to BossWare / ControLink master RS422 Rx[-])
5	RS422 Communications common
6	N/C
7	N/C
8	N/C
9	N/C

Should it be required to operate the PITIF in RS485 mode, then the TX pair and the RX pair must be joined together on this connector. i.e. Pin 1 to pin 4 and pin 2 to pin 3

5.1.2 Master Port Configured as RS422

Interface equipment control messages, generated / received by PITIF, use this port. Connections are as follows:

Should it be required to operate the PITIF in RS485 mode, then the TX pair and the RX pair must be joined together on this connector. i.e. Pin 1 to pin 4 and pin 2 to pin 3

Pin Number	Pin Function
1	RS422 Transmit data [-] (to slave device RS422 Rx[-])
2	RS422 Transmit data [+] (to slave device RS422 Rx[+])
3	RS422 Receive data [+] (from slave device RS422 Tx[+])
4	RS422 Receive data [-] (from slave device RS422 Tx[-])
5	RS422 Communications common (from slave device communications common)
6	N/C
7	N/C
8	N/C
9	N/C

5.1.3 Master Port Configured as RS232

Pin Number	Pin Function
1	Internally connected to pins 4 and 6
2	TXD (data to slave device RXD)
3	RXD (data from slave device TXD)
4	Internally connected to pins 1 and 6
5	GND
6	Internally connected to pins 4 and 6
7	CTS (from slave device RTS)
8	RTS (to slave device CTS)
9	N/C

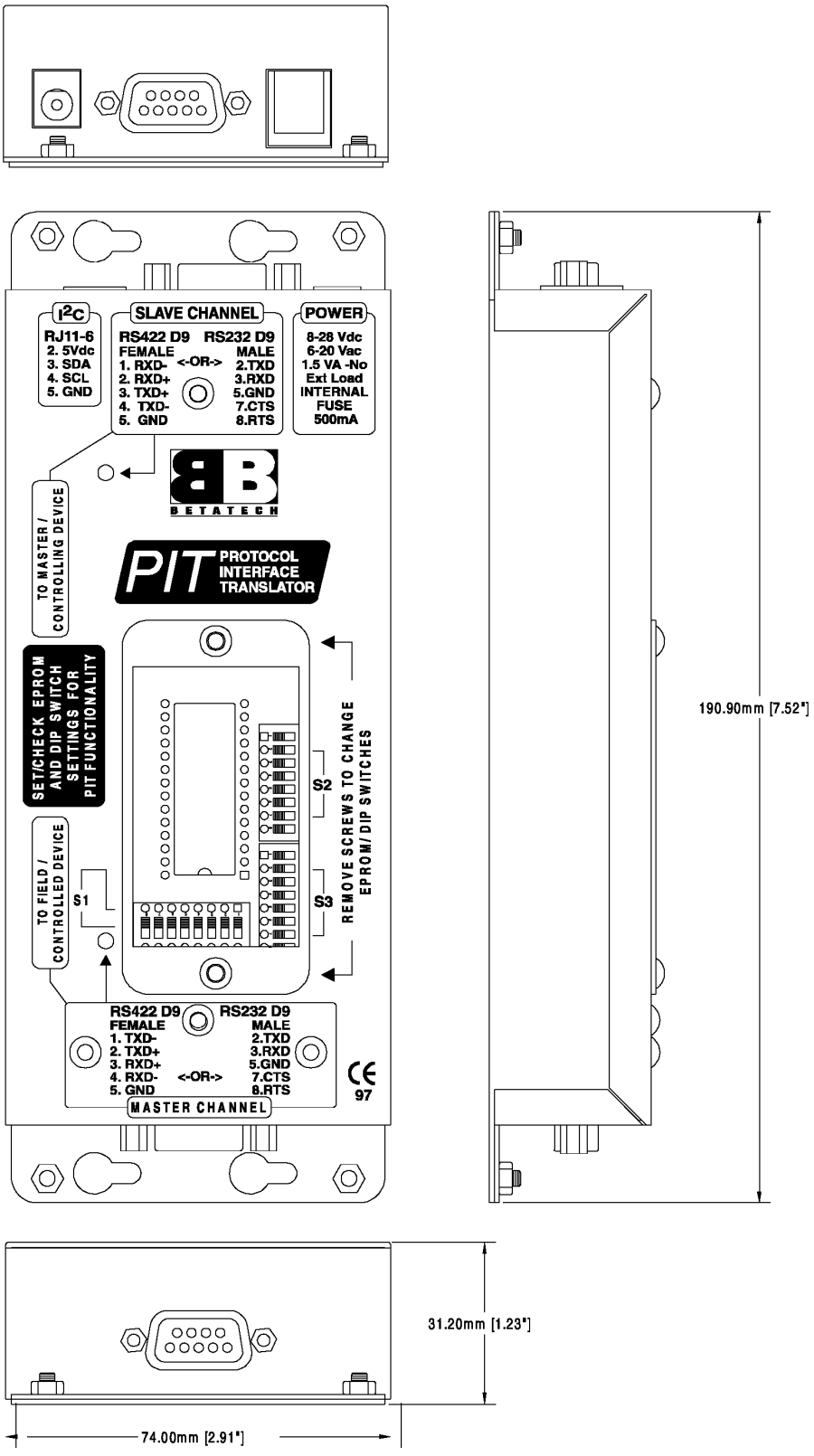
5.1.4 Power Connection

The unit is be powered by 8 to 25 VAC 50/60 Hz or 9 to 34VDC @ 1.5W. This is applied via the external power connector.

5.1.5 I²C Expansion Connection

Pin Number	Pin Function
1	VCC (+ 5VDC out to external I²C device)
2	SDA (I²C data)
3	SCL (I²C clock)
4	GND (Common)

6.1 MECHANICAL



7.1 SPECIFICATIONS

Compliance	EN55022 for radiated and conducted emissions IEC 801-3, Class 3 for RF susceptibility
Power Requirements	8 to 25 VAC 50/60 Hz or 9 to 34VDC @ 1.5W, requires external power adapter
Mechanical	Dimensions: 74mm (W) X 31.2 mm (H) X 190.9mm (D) Weight: 390g Finish: Brushed stainless steel
Environmental	Operating Temperature: -10 to +50 deg C Storage Temperature: -20 to +65 deg C Humidity: 0 to 95% RH (non-condensing)
Slave Communications Port	Baud Rate: 9600 Baud, 19.2 KBaud, 57.6 Kbaud or 115.2 Kbaud Addressing range: Broadcast or 1 to 255 Protocol: BossWare Electrical: RS422, can be wired for RS485
Master Communications Port	Baud Rate: From 1200 Baud to 57.6 Kbaud, dependent on required translation type. Electrical: RS422, can be wired for RS485. Optionally RS232.
Connector Type	RS232 D9 Male RS422 D9 Female Power 2.0mm DC plug I2C 6 position RJ45 (4 fitted)
Interface Options: NOTE: The transmitted/received data may be set to control / receive certain functions of equipment from the listed manufacturers. No representation is made that the generated / received data conforms in every respect to that of the listed equipment manufacturer.	Text / diagnosis input Glory GND200 Spindle Note Counter (or GNH200) Teraoke DC150 Scale Mach 7 Coin batch counter Glory GFR120 Note Counter / Sorter Scan Coin 880 Currency Counter CVK110 / CC50 Note Counter COR15 Coin Scale Glory GFB500 Note Batcher Glory CN12 Coin Counter Paycom Progressive Jackpot

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